

CLAIMS

1. A contactless card that communicates with a reader/writer after being supplied with electric power, comprising:

5 a power detection unit operable to detect electric power enough to communicate with the reader/writer;

an identifier determination unit operable to determine an identifier that identifies the contactless card, every time the power detection unit detects the enough electric power;

10 a determined identifier storage unit operable to hold the identifier determined by the identifier determination unit;

a receiving unit operable to receive, from the reader/writer, a command requesting that the identifier that identifies the contactless card should be sent to the reader/writer; and

15 a sending unit operable to send, to the reader/writer, (i) the identifier determined by the identifier determination unit in the case where the command received by the receiving unit is a first-received command, and (ii) the identifier held in the determined identifier storage unit in the case where the command received by the receiving unit is a second- or later-received command.

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2. A contactless card according to Claim 1,

25 wherein the identifier determination unit is operable to generate an identifier every time the power detection unit detects the enough electric power, and to determine the generated identifier as the identifier that identifies the contactless card.

3. A contactless card according to Claim 2,

30 wherein the identifier determination unit is operable to generate the identifier made up of a fixed value portion and a random number portion.

4. A contactless card according to Claim 1, further comprising

a candidate Identifier storage unit operable to hold candidate identifiers,

wherein the identifier determination unit is operable to select one of the candidate identifiers held in the candidate Identifier storage unit every time the power detection unit detects the enough electric power, and to determine the selected candidate identifier as the Identifier that identifies the contactless card.

5. A contactless card according to Claim 1,
10 wherein the identifier determination unit is operable to determine the Identifier using a random number.

6. A contactless card according to Claim 1, further comprising
15 a communication end detection unit operable to detect an end of a communication between the reader/writer and the receiving unit and the sending unit,

wherein the identifier determination unit is operable to determine a new Identifier and the determined identifier storage unit is operable to hold the new identifier in the case where the
20 communication end detection unit detects the end of the communication.

7. A contactless card according to Claim 1,
25 wherein the communication between the reader/writer and the contactless card is in compliance with ISO/IEC14443, and the Identifier sent by the sending unit is set as a Pseudo-Unique Proximity Integrated Circuit Card Identifier included in a response to a request command that is sent from the reader/writer to the contactless card.

30 8. A contactless card according to Claim 1, further comprising:
a mode judgment unit operable to judge an operation mode in

which the contactless card operates;

a random identifier generation unit operable to generate an identifier in a random manner; and

5 a specific identifier generation unit operable to generate a specific identifier,

wherein the identifier determination unit is operable to determine one of the following identifiers as the identifier that identifies the contactless card based on the judgment made by the mode judgment unit: the identifier generated by the random
10 identifier generation unit; and the identifier generated by the specific identifier generation unit.

9. A contactless card according to Claim 8,

wherein the operation mode includes: an inspection mode
15 indicating that the contactless card is in an inspection process; and a use mode indicating that the contactless card is in use by a public user, and

the identifier determination unit is operable (i) to determine, in the inspection mode, that the identifier generated by the specific
20 identifier generation unit is the identifier that identifies the contactless card, and (ii) to determine, in the use mode, that the identifier generated by the random identifier generation unit is the identifier that identifies the contactless card.

25 10. A contactless card according to Claim 8,

wherein the specific identifier generation unit is operable to generate the identifier based on information stored in a read only memory where information stored therein is not rewritable.

30 11. A contactless card according to Claim 8,

wherein the specific identifier generation unit is operable to generate the identifier based on information stored in a non-volatile

memory where information stored therein is rewritable.

12. A contactless card according to Claim 11,
wherein the non-volatile memory is one of an electrically
erasable programmable read only memory, a ferroelectric random
access memory, a magnetoresistive random access memory, and an
ovonic unified memory.

13. A communication method performed by a contactless card to
send an Identifier, the contactless card communicating with a
reader/writer after being supplied with electric power, the method
comprising:

detecting electric power enough to communicate with the
reader/writer;

determining an identifier that identifies the contactless card,
every time the enough electric power is detected in the detecting;

storing the determined Identifier into a storage unit;

receiving, from the reader/writer, a command requesting that
the identifier that identifies the contactless card should be sent to
the reader/writer; and

sending, to the reader/writer, (i) the determined Identifier in
the case where the received command is a first-received command,
and (ii) the identifier stored in the storage unit in the case where
the received command is a second- or later-received command.

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14. An integrated circuit in a contactless card that communicates
with a reader/writer after being supplied with electric power, the
integrated circuit comprising:

a power detection unit operable to detect electric power
enough to communicate with the reader/writer;

an identifier determination unit operable to determine an
identifier that identifies the contactless card, every time the power

detection unit detects the enough electric power;

a determined identifier storage unit operable to hold the identifier determined by the Identifier determination unit;

5 a receiving unit operable to receive, from the reader/writer, a command requesting that the Identifier that identifies the contactless card should be sent to the reader/writer; and

10 a sending unit operable to send, to the reader/writer, (i) the identifier determined by the identifier determination unit in the case where the command received by the receiving unit is a first-received command, and (ii) the identifier held in the determined identifier storage unit in the case where the command received by the receiving unit is a second- or later-received command.

15 15. A program for sending an identifier of a contactless card that communicates with a reader/writer after being supplied with electric power, the program causing a computer to execute:

detecting electric power enough to communicate with the reader/writer;

20 determining an identifier that identifies the contactless card, every time the enough electric power is detected in the detecting;

storing the determined identifier into a storage unit;

receiving, from the reader/writer, a command requesting that the identifier that identifies the contactless card should be sent to the reader/writer; and

25 sending, to the reader/writer, (i) the determined identifier in the case where the received command is a first-received command, and (ii) the identifier stored in the storage unit in the case where the received command is a second- or later-received command.

30 16. A storage medium in which a program for sending an identifier of a contactless card that communicates with a reader/writer after being supplied with electric power is stored, the program causing a

computer to execute:

detecting electric power enough to communicate with the reader/writer;

5 determining an identifier that identifies the contactless card,
every time the enough electric power is detected in the detecting;
storing the determined identifier into a storage unit;

receiving, from the reader/writer, a command requesting that the identifier that identifies the contactless card should be sent to the reader/writer; and

10 sending, to the reader/writer, (i) the determined identifier in the case where the received command is a first-received command, and (ii) the identifier stored in the storage unit in the case where the received command is a second- or later-received command.